Development of a foundation model for the sciences with a focus on histopathology (e.g. DNA methylation)

Project description:

In recent years, great progress has been made in the field of machine learning in the area of foundation models. Examples are in speech (e.g. ChatGPT, Bard), computer vision (e.g. Dalle, Imagen, Florence). The aim of the PhD project is to develop a foundation model for the sciences with a focus on histopathology (e.g. DNA methylation). In particular, it is a challenge to include medical a priori knowledge and to ensure explainability and uncertainty quantification for the new foundation model. These are fundamentally unsolved problems.

Keywords

Explainable AI, Probabilistic Machine Learning, Deep Learning, Multimodal Learning, Quantum Chemistry, Digital Histopathology, Biomedical Sensing, Computational Neuroscience, Digital Humanities

Entry requirements
- You are enthusiastic about developing and investigating an innovative research idea within the discipline of Prof. Dr. Klaus-Robert Müller
- You have a master's degree in a scientific or engineering subject with excellent grades

Location

Technische Universität Berlin/BIFOLD, Machine Learning / Intelligent Data Analysis (IDA)
Marchstr. 23, 10587 Berlin

Starting date
As soon as possible

Funding

Four years of funding (3+1, three years with the possibility to extend for one year)

How to apply

Please apply via the HFA application portal.

The Hector Fellows will arrange interviews (via skype or if feasible in-person) with the most promising applicants. The final candidates will be invited for an online presentation on June 20, 2024. The final decisions will be announced in July 2024.

Interdisciplinary Network for
Cutting-Edge Research

Application Deadline: March 31, 2024

Enquiries

For further details about the project, please contact Hector Fellow Prof. Müller at:
klaus.r.mueller@googlemail.com

For questions related to making your application, please contact Hector Fellow Academy Office:
application@hector-fellow-academy.de or www.hector-fellow-academy.de